



Evaluating the Effectiveness of the Malaysia Diabetes Prevention Programme (MyDiPP) Mobile Application in Supporting Weight Loss Among Adults at Risk of Type 2 Diabetes: A Randomised Controlled Trial

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Abstract

Background: Type 2 diabetes mellitus (T2DM) is a growing public health concern in Malaysia, and early intervention is critical for prevention. Mobile health (mHealth) applications, such as the Malaysia Diabetes Prevention Programme (MyDiPP), offer promising platforms to support behavioural modification and reduce diabetes risk. This study aimed to evaluate the effect of the MyDiPP mobile application on body weight change among adults at high risk of developing T2DM. Methods: A single-blind, randomised controlled trial was conducted among 112 high-risk adults in Kuala Terengganu, Malaysia. Participants were randomly assigned to either the intervention group (n=56), which received access to the MyDiPP mobile application comprising educational modules, self-monitoring tools, health coaching, and peer support for 12 months, or the control group (n=56), which received standard health education. Body weight was measured at baseline, 6 months, and 12 months. Changes in body weight were analysed using repeated measures ANCOVA under an intention-to-treat (ITT) approach. Results: The intervention group achieved significantly greater reductions in body weight compared to the control group at both 6 months (mean difference: -2.28 kg; 95% CI: -4.09 to -0.46; p = 0.014) and 12 months (mean difference: -2.09 kg; 95% CI: -4.11 to -0.08; p = 0.042). While within-group weight changes did not reach statistical significance, the between-group differences support the added value of the digital intervention. Conclusions: The MyDiPP mobile application demonstrates potential as an effective, scalable mHealth tool to promote modest weight loss among high-risk individuals, thereby supporting diabetes prevention efforts in Malaysia. Future research should investigate long-term adherence, user engagement strategies, and the integration of such digital tools into national public health initiatives.

Keywords: Diabetes Prevention, Lifestyle Intervention, mHealth, Mobile Apps, Obesity, Type 2 Diabetes Mellitus

